I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, ON THE DATE INDICATED BELOW.

BY: Renee Conti Date: July 21, 2004

MAIL STOP RCE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Patent Application of: Johan Knevels et al.			
Conf. No.:	3749	Group Art Unit:	1753
Appln. No.:	10/056,919	Examiner:	Ta Hsung Tung
Filing Date:	January 25, 2002	Attorney Docket No.:	926-62US (P09914US)
Title:	MEASURING DEVICE FOR DETERMINING THE OXYGEN ACTIVITY IN METAL MELTS OR SLAG MELTS		

DECLARATION OF JACQUES PLESSERS UNDER 37 C.F.R. § 1.132

I, Jacques Plessers, declare and state as follows:

1. I am a citizen of Belgium, residing at HOUTHALEN, Belgium. I have a Master's degree in electronic engineering and a Doctorate in materials science. I have thirty-five years of experience in the field of sensors for use in liquid metals and the field of vapor pressure measurements. I am the inventor and patentee in numerous U.S. and foreign patents.

2. I am currently and have for many years been employed by Heraeus Electro-Nite International N.V. of Houthalen, Belgium, the Assignee of the above application, and its predecessor companies, including Electro-Nite, N.V. I am familiar with the above application and its prosecution history.

3. I have reviewed the Office Action dated November 19, 2003 in which the Examiner has rejected all of the claims based upon German Published Patent Application DE 30 21 949 ("DE '949") and U.S. Patent 4,342,633 of Cure, among others, both of which references are owned by Heraeus Electro-Nite International N.V. or its related companies. I am familiar with both of these references. I present this Declaration in order to refute the Examiner's

statements regarding these references at page 2 of the November 19 Office Action, in particular the statements:

> The cap in the DE ['949] electrode probe is at the electrical connection end and is not intended to be immersed in the molten metal, and thus would not be subjected to the high temperatures of a molten metal. Note for example the Cure patent 4,342,633 ..., which shows plastic elements 66, 68 at the electrical connection end of a probe.

4. During an oxygen measurement in a metal or slag melt, the immersion end of the solid electrolyte cell must withstand a temperature of about 1450 to 1730°C. The back of the cell with the plug reaches a temperature of about 200 to 300°C, and the connector to the measuring head remains at an ambient temperature of about 20 to 40°C.

5. Silicon rubber or two component glue, such as used in the measuring cell of DE '949, does prevent moisture ingress into the solid electrolyte cell during assembly and storage of the probe. However, the cap disintegrates during the measurement and contaminates the solid electrolyte cell. Therefore, in my opinion, it would not have been obvious to one skilled in the art to use a plastic plug to seal the end of the solid electrolyte cell, because during the measurement, the plastic would degenerate and possibly contaminate the oxygen cell, which would result in a measurement error.

6. I agree that it might have been obvious to use a plastic connector, such as described in U.S. Patent 4,342,633 of Cure, since the connector remains at ambient temperature, as mentioned above. However, in my opinion, it would not have been obvious to use a polypropylene plug on the back of the solid electrolyte cell, since the melting temperature of polypropylene is 160°C. Surprisingly, the inventors of the present application have discovered that the polypropylene cap does not influence the measurement result and that the polypropylene cap is completely dissolved upon withdrawal of the measuring probe.

7. In sum, while the Examiner is correct that the electrical connection end of the electrode probe would not be subjected to the high temperatures of the molten metal (1400 to 1730°C), that end of the probe is still subjected to high temperatures (200 to 300°C), which are above the melting point of the polypropylene plug or cap of the present invention. Accordingly, in my opinion, the Examiner's assumption and stated basis for his rejection are without merit, particularly since Applicants have not selected a plastic with a high melting point, but instead

have selected polypropylene which melts below the temperatures reached at the back end of the electrolyte cell.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that those statements were made with the knowledge that willful false statements the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

07 - 12 - 04
Date

Jacques Plessers